CLAIMS

What is claimed is:

SUB A1

1. A method for routing information over an optical network supporting multiple optical service models, the method comprising:

receiving a link state advertisement at a switch;

checking flooding domain information to decide whether to broadcast or block propagation of the link state advertisement, wherein checking the flooding domain information comprises checking an optical UNI interface type, an optical interface descriptor, and available bandwidth; and

accepting or rejecting the request based on the flooding domain information.

2. The method of claim 1, wherein the optical interface descriptor includes a user termination point, a user contract identifier, a user group identifier, and a user service mode identifier.

3. The method of claim 2, wherein the link state advertisement includes the optical interface descriptor.

4. A method for routing information over an optical network supporting multiple optical service models, the method comprising:

receiving a link state advertisement including an incoming optical interface descriptor at an optical switch;

checking outgoing link information;

flooding the link state advertisement over the outgoing link if the outgoing link information includes a first pre-defined value,

blocking the link state advertisement if the outgoing link information includes a second pre-defined value; and

comparing the incoming optical interface descriptor and the outgoing link information if the outgoing link information includes neither the first pre-defined value nor the second predefined value and flooding the link state advertisement only if the incoming optical interface descriptor includes a value matching the outgoing link information.

5. The method of claim 4, further comprising checking a user status identifier prior to transmitting a link state advertisement and determining from the status identifier whether the user is out of service, busy, testing, or idle.

6. The method of claim 5, further comprising blocking transmission of the link state advertisement if the user is out of service, busy, or testing, and completing transmission of the link state advertisement if the user is idle.

7. The method of claim 4, wherein the multiple optical service models comprise an overlay model, a peer-to-peer model, and an augmented model.

8. The method of claim 7, wherein the link state advertisement is an optical link state advertisement.

9. The method of claim 8, further comprising flooding the optical link state advertisement if the service mode of the outgoing link is the overlay mode or the peer-to-peer mode and blocking the link state advertisement if the

service mode of the outgoing link is the overlay mode.

10. The method of claim 7, wherein the link state advertisement is a service link state advertisement.

11. The method of claim 10, further comprising flooding the service link state advertisement in all service modes.

12. The method of claim 7, wherein the link state advertisement is neither a service link state advertisement or an optical link state advertisement.

13. The method of claim 12, further comprising blocking the optical link state advertisement if the service mode is overlay mode or augmented mode and flooding the link state advertisement if the service mode is the peer-to-peer mode.

14. The method of claim 4, wherein the incoming optical interface descriptor comprises a user termination point, a user group ID, a user contract identifier, and a

user network identifier.

15. The method of claim 14, wherein the outgoing link information includes a value selected from a first value for broadcasting, a second value for blocking, and a third value.

16. A system for routing information over an optical network having multiple optical service models, the system comprising:

wavelength routing protocol means for flooding an optical link state advertisement to an optical switch;

means for checking an optical interface descriptor and an administrative domain to determine whether to broadcast or block propagation of the link state advertisement; and

wavelength distribution protocol means for issuing a connection request upon receiving a broadcast determination.

17. The system claim 16, further comprising OBCP means for flooding a service LSA.

18. The system of claim 16, wherein the wavelength

distribution protocol further comprises means for receiving a constraint-based path from the wavelength routing protocol.

19. The system of claim 18, wherein the wavelength routing protocol comprises OSPF means for determining an optimal path.

20. A processor readable medium for providing instructions to at least one processor for delivery the at least one processor to:

receive a link state advertisement including an optical interface descriptor at a switch;

check outgoing link information;

flood the link state advertisement if the outgoing link information includes a first pre-defined value;

block the link state advertisement if the outgoing link information includes a second predefined value; and

compare the incoming interface descriptor to the outgoing link information if the outgoing link information includes neither the first pre-defined value nor the second pre-defined and flooding the link state advertisement only

if the incoming optical interface descriptor includes a value matching the outgoing link information.